

Appl. No. : 10/772,101
Filed : February 4, 2004

AMENDMENTS TO THE CLAIMS

Please cancel Claims 5-11, Claims 17-30, Claims 34-35, and Claims 46-78.

1. (Currently amended) A prosthetic valve assembly for use in replacing a deficient native valve, the valve assembly comprising:

a valve having a base, a plurality of commissure points, and a plurality of resilient leaflets;

a valve support configured to be collapsible for transluminal delivery and comprising a first and a second portion, said first portion expandable to contact the anatomical annulus of the native valve when the assembly is properly positioned, said second portion supporting the base and the commissure points of the valve; and

a radial restraint for controlling a diameter of the second portion, the radial restraint comprising a wire.

2. (Original) The valve assembly of Claim 1, wherein the radial restraint is capable of substantially resisting expansion beyond a preset diameter.

3. (Original) The valve assembly of Claim 1, wherein the radial restraint is capable of substantially resisting collapse below a preset diameter.

4. (Original) The valve assembly of Claim 1, wherein the radial restraint is capable of substantially resisting expansion beyond a preset diameter and substantially resisting collapse below a preset diameter.

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Original) The valve assembly of Claim 1, further comprising a drug-eluting component.

Appl. No. : 10/772,101
Filed : February 4, 2004

13. (Original) The valve assembly of Claim 1, further comprising an anchor for engaging the lumen wall when expanded in place for preventing substantial migration of the valve assembly after deployment.

14. (Original) The valve assembly of Claim 1, wherein the valve support comprises at least one wire.

15. (Original) The valve assembly of Claim 14, wherein the valve support comprises a single length of wire.

16. (Currently amended) The valve assembly of Claim 15[14], wherein at least one portion of the single length of wire has a reduced thickness to decrease the radial expansion force.

Claims 17-30 (Canceled)

31. (Currently amended) A prosthetic valve assembly configured for endoluminal delivery to replace a deficient native valve, the valve assembly comprising an axial valve support portion configured to support a prosthetic valve having at least one leaflet and to prevent substantial interference with the positioning and/or operation of the prosthetic valve by any residual components of the native valve, including calcified native components, said support portion comprising at least one radial restraint at a first section of said support portion to preclude expansion when deployed in situ substantially no greater than a preset diameter to increase coaptivity of the prosthetic valve leaflets and to prevent significant regurgitation, and a second section configured to expand in situ for pushing the residual native valve components against the native annulus and surrounding tissue, wherein the second section is configured to expand to a diameter different from that of the first section.

32. (Original) The valve assembly of Claim 31, wherein the radial restraint is configured to reduce recoil.

33. (Original) The valve assembly of Claim 31, wherein the radial restraint comprises a mechanical stop.

34. (Canceled)

35. (Canceled)

36. (Currently amended) The valve assembly of Claim 3431, wherein said second section is configured to be expanded by a balloon catheter.

37. (Original) The valve assembly of Claim 36, wherein said second section is configured to be expanded beyond its yield point in situ.

38. (Original) The valve assembly of Claim 31, further comprising a stent configured to expand in situ for pushing against the residual native valve components.

39. (Original) The valve assembly of Claim 38, wherein the stent is self-expanding.

40. (Original) The valve assembly of Claim 38, wherein the stent is configured to be expanded by a balloon catheter.

41. (Original) The valve assembly of Claim 31, further comprising a stent configured to reduce the recoil of the support portion following self-expansion of the support portion.

42. (Original) The valve assembly of Claim 38, wherein the stent is configured to reside within the valve support portion when deployed.

43. (Original) The valve assembly of Claim 38, wherein the stent is configured to reside outside the valve support portion when deployed.

44. (Original) The valve assembly of Claim 31, further comprising at least one anchor configured to exert sufficient radial forces against the lumen wall to prevent substantial migration.

45. (Original) The valve assembly of Claim 31, wherein said radial restraint comprises a wire.

Claims 46-78 (Canceled)

79. (New) A prosthetic valve assembly for use in replacing a deficient native valve, the valve assembly comprising:

a valve having a base, a plurality of commissure points, and a plurality of resilient leaflets;

a valve support configured to be collapsible for transluminal delivery and comprising a single length of wire, a first portion and a second portion, said first portion expandable to contact the anatomical annulus of the native valve when the assembly is

properly positioned, said second portion supporting the base and the commissure points of the valve; and

a radial restraint for controlling a diameter of the second portion;

wherein the single length of wire has a reduced thickness to decrease the radial expansion force.

80. (New) The valve assembly of Claim 79, wherein the radial restraint is capable of substantially resisting expansion beyond a preset diameter.

81. (New) The valve assembly of Claim 79, wherein the radial restraint is capable of substantially resisting collapse below a preset diameter.

82. (New) The valve assembly of Claim 79, wherein the radial restraint is capable of substantially resisting expansion beyond a preset diameter and substantially resisting collapse below a preset diameter.

83. (New) The valve assembly of Claim 79, wherein the radial restraint comprises a wire.

84. (New) The valve assembly of Claim 79, wherein the radial restraint comprises a thread.

85. (New) The valve assembly of Claim 79, wherein the radial restraint comprises a mechanical stop.

86. (New) The valve assembly of Claim 79, wherein the radial restraint comprises material from which at least a portion of the valve support is made so that the second portion does not expand beyond a preset diameter.

87. (New) The valve assembly of Claim 86, wherein the material comprise shape memory material.

88. (New) The valve assembly of Claim 79, wherein the radial restraint comprises a cuff.

89. (New) The valve assembly of Claim 79, wherein the radial restraint comprises a stent configured to cooperate with the valve support so as to substantially preclude recoil.

90. (New) The valve assembly of Claim 79, further comprising a drug-eluting component.

91. (New) The valve assembly of Claim 79, further comprising an anchor for engaging the lumen wall when expanded in place for preventing substantial migration of the valve assembly after deployment.

Appl. No. : 10/772,101
Filed : February 4, 2004

92. (New) A prosthetic valve assembly configured for endoluminal delivery to replace a deficient native valve, the valve assembly comprising an axial valve support portion configured to support a prosthetic valve having at least one leaflet and to prevent substantial interference with the positioning and/or operation of the prosthetic valve by any residual components of the native valve, including calcified native components, said support portion comprising at least one radial restraint at a first section of said support portion to preclude expansion when deployed in situ substantially no greater than a preset diameter to increase coaptivity of the prosthetic valve leaflets and to prevent significant regurgitation, and a second section configured to expand in situ for pushing the residual native valve components against the native annulus and surrounding tissue, wherein the second section is configured to expand to a diameter different from that of the first section beyond its yield point in situ by a balloon catheter.

93. (New) The valve assembly of Claim 92, further comprising a stent configured to expand in situ for pushing against the residual native valve components.

94. (New) The valve assembly of Claim 93, wherein the stent is configured to reside within the valve support portion when deployed.

95. (New) The valve assembly of Claim 93, wherein the stent is configured to reside outside the valve support portion when deployed.

96. (New) The valve assembly of Claim 92, further comprising at least one anchor configured to exert sufficient radial forces against the lumen wall to prevent substantial migration.

97. (New) The valve assembly of Claim 92, wherein said radial restraint comprises a wire.

98. (New) A prosthetic valve assembly configured for endoluminal delivery to replace a deficient native valve, the valve assembly comprising an axial valve support portion configured to support a prosthetic valve having at least one leaflet and to prevent substantial interference with the positioning and/or operation of the prosthetic valve by any residual components of the native valve, including calcified native components, said support portion comprising at least one radial restraint at a first section of said support portion to preclude expansion when deployed in situ substantially no greater than a preset diameter to increase coaptivity of the prosthetic valve leaflets and to prevent significant regurgitation, wherein said radial restraint comprises a wire.

Appl. No. : **10/772,101**
Filed : **February 4, 2004**

99. (New) The valve assembly of Claim 98, wherein the radial restraint is configured to reduce recoil.

100. (New) The valve assembly of Claim 98, wherein the support portion further comprises a second section configured to expand in situ for pushing the residual native valve components against the native annulus and surrounding tissue.

101. (New) The valve assembly of Claim 100, wherein the second section is configured to expand to a diameter different from that of the first section.

102. (New) The valve assembly of Claim 100, wherein said second section is configured to be expanded by a balloon catheter.

103. (New) The valve assembly of Claim 102, wherein said second section is configured to be expanded beyond its yield point in situ.

104. (New) The valve assembly of Claim 98, further comprising a stent configured to expand in situ for pushing against the residual native valve components.

105. (New) The valve assembly of Claim 104, wherein the stent is self-expanding.

106. (New) The valve assembly of Claim 104, wherein the stent is configured to be expanded by a balloon catheter.

107. (New) The valve assembly of Claim 98, further comprising a stent configured to reduce the recoil of the support portion following self-expansion of the support portion.

108. (New) The valve assembly of Claim 104, wherein the stent is configured to reside within the valve support portion when deployed.

109. (New) The valve assembly of Claim 104, wherein the stent is configured to reside outside the valve support portion when deployed.

110. (New) The valve assembly of Claim 98, further comprising at least one anchor configured to exert sufficient radial forces against the lumen wall to prevent substantial migration.